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NEWS 2	Apr 08	"Ask CAS" for self-help around the clock
NEWS 3	Apr 09	BEILSTEIN: Reload and Implementation of a New Subject Area
NEWS 4	Apr 09	ZDB will be removed from STN
NEWS 5	Apr 19	US Patent Applications available in IFICDB, IFIPAT, and IFIUDB
NEWS 6	Apr 22	Records from IP.com available in CAPLUS, HCAPLUS, and ZCAPLUS
NEWS 7	Apr 22	BIOSIS Gene Names now available in TOXCENTER
NEWS 8	Apr 22	Federal Research in Progress (FEDRIP) now available
NEWS 9	Jun 03	New e-mail delivery for search results now available
NEWS 10	Jun 10	MEDLINE Reload
NEWS 11	Jun 10	PCTFULL has been reloaded
NEWS 12	Jul 02	FOREGE no longer contains STANDARDS file segment
NEWS 13	Jul 22	USAN to be reloaded July 28, 2002; saved answer sets no longer valid
NEWS 14	Jul 29	Enhanced polymer searching in REGISTRY
NEWS 15	Jul 30	NETFIRST to be removed from STN
NEWS 16	Aug 08	CANCERLIT reload
NEWS 17	Aug 08	PHARMAMarketLetter(PHARMAML) - new on STN
NEWS 18	Aug 08	NTIS has been reloaded and enhanced
NEWS 19	Aug 19	Aquatic Toxicity Information Retrieval (AQUIRE) now available on STN
NEWS 20	Aug 19	IFIPAT, IFICDB, and IFIUDB have been reloaded
NEWS 21	Aug 19	The MEDLINE file segment of TOXCENTER has been reloaded
NEWS 22	Aug 26	Sequence searching in REGISTRY enhanced
NEWS 23	Sep 03	JAPIO has been reloaded and enhanced
NEWS 24	Sep 16	Experimental properties added to the REGISTRY file
NEWS 25	Sep 16	CA Section Thesaurus available in CAPLUS and CA
NEWS 26	Oct 01	CASREACT Enriched with Reactions from 1907 to 1985
NEWS 27	Oct 21	EVENTLINE has been reloaded
NEWS 28	Oct 24	BEILSTEIN adds new search fields
NEWS 29	Oct 24	Nutraceuticals International (NUTRACEUT) now available on STN
NEWS 30	Oct 25	MEDLINE SDI run of October 8, 2002
NEWS 31	Nov 18	DKILIT has been renamed APOLLIT
NEWS 32	Nov 25	More calculated properties added to REGISTRY
NEWS 33	Dec 02	TIBKAT will be removed from STN
NEWS 34	Dec 04	CSA files on STN
NEWS 35	Dec 17	PCTFULL now covers WP/PCT Applications from 1978 to date
NEWS 36	Dec 17	TOXCENTER enhanced with additional content
NEWS 37	Dec 17	Adis Clinical Trials Insight now available on STN
NEWS 38	Dec 30	ISMEC no longer available
NEWS 39	Jan 13	Indexing added to some pre-1967 records in CA/CAPLUS
NEWS 40	Jan 21	NUTRACEUT offering one free connect hour in February 2003
NEWS 41	Jan 21	PHARMAML offering one free connect hour in February 2003
NEWS 42	Jan 29	Simultaneous left and right truncation added to COMPENDEX, ENERGY, INSPEC

NEWS EXPRESS January 6 CURRENT WINDOWS VERSION IS V6.01a,
CURRENT MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),

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                AND CURRENT DISCOVER FILE IS DATED 01 OCTOBER 2002
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 NEWS PHONE     Direct Dial and Telecommunication Network Access to STN
 NEWS WWW       CAS World Wide Web Site (general information)

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                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       0.21       0.21

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FILE LAST UPDATED: 10 Feb 2003  (20030210/ED)

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=> (array) and ((non(2w)specific (2w) (binding or priming)) or mispriming)
(ARRAY) IS NOT A RECOGNIZED COMMAND
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For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s (array) and ((non(2w)specific (2w) (binding or priming)) or mispriming)
         73977 ARRAY
         32093 ARRAYS
         93338 ARRAY
                 (ARRAY OR ARRAYS)
        576937 NON
            30 NONS
```

```
         576961 NON
                   (NON OR NONS)
        1111672 SPECIFIC
            987 SPECIFICS
        1112560 SPECIFIC
                   (SPECIFIC OR SPECIFICS)
         246910 SP
           5017 SPS
         251704 SP
                   (SP OR SPS)
        1332735 SPECIFIC
                   (SPECIFIC OR SP)
         751216 BINDING
           1690 BINDINGS
         751680 BINDING
                   (BINDING OR BINDINGS)
          14155 PRIMING
             63 PRIMINGS
          14186 PRIMING
                   (PRIMING OR PRIMINGS)
           1163 NON(2W)SPECIFIC (2W) (BINDING OR PRIMING)
             40 MISPRIMING
              1 MISPRIMINGS
             40 MISPRIMING
                   (MISPRIMING OR MISPRIMINGS)
L1           24 (ARRAY) AND ((NON(2W)SPECIFIC (2W) (BINDING OR PRIMING)) OR
                MISPRIMING)

=> d kwic

L1   ANSWER 1 OF 24  CAPLUS  COPYRIGHT 2003 ACS
AB   In response to the challenge laid down by advances in other drug discovery
     functions, DMPK has now established an array of automated,
     miniaturized in vitro screens, rapid bioanal. methodologies and in silico
     tools with which to optimize or predict passive. . . clearance, protein
     binding and distribution. However, some fundamental processes remain to
     be elucidated fully, including the in vivo impact of non-
     specific or futile binding in in vitro screens and the
     functional significance of intestinal and hepatobiliary transporter
     proteins. Transgenic animals should soon add value. . .


=> s l1 (p) ((negatively (3a) charged) or phosphate)
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'L1 (P) '
           4757 NEGATIVELY
         414754 NEG
            277 NEGS
         414926 NEG
                   (NEG OR NEGS)
         417290 NEGATIVELY
                   (NEGATIVELY OR NEG)
         159808 CHARGED
          21610 NEGATIVELY (3A) CHARGED
         472422 PHOSPHATE
         104495 PHOSPHATES
         513727 PHOSPHATE
                   (PHOSPHATE OR PHOSPHATES)
L2            3 L1 (P) ((NEGATIVELY (3A) CHARGED) OR PHOSPHATE)

=> d bib,kwic 1-3

L2   ANSWER 1 OF 3  CAPLUS  COPYRIGHT 2003 ACS
AN   2002:429464  CAPLUS
```

DN 137:1480
TI Probe microarrays with internal standards for determination of background hybridization
IN Delenstarr, Glenda C.; Wolber, Paul K.; Sana, Theodore R.
PA USA
SO U.S. Pat. Appl. Publ., 38 pp., Cont.-in-part of U.S. Ser. No. 398,399.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002068293	A1	20020606	US 2001-899381	20010702
	US 2002051973	A1	20020502	US 1999-398399	19990917
PRAI	US 1999-398399	A2	19990917		

AB Nucleic acid **arrays** that have background features, and methods for using the same, are provided. The subject nucleic acid **arrays** include both hybridization features and defined background features, where the background features provide a background signal in a hybridization assay that is made up of a feature substrate component, a nucleic acid probe component and a nucleic acid probe **non-specific binding** component. In practicing the subject methods, the **arrays** are contacted with a sample and signals are obsd. for both hybridization features and background features. The background feature signal is then subtracted from the hybridization feature signal to obtain a background cor. hybridization feature signal that is employed as the output of the assay, e.g., to det. the presence, either qual. or quant., of the analyte target nucleic acid in the sample. The probes for detn. of background hybridization may fail to hybridize for a variety of reasons including structure, conformation, sequence, presence of base analogs, or the presence of abasic regions. Also provided are kits for use in practicing the subject methods. Probes intended to hybridize to the human glyceraldehyde-3-**phosphate** dehydrogenase were tested and a no. that did not hybridize to their targets in microarrays were identified. These probes and their targets were used to det. the minimal hybridization in a microarray. Probes forming internal hairpin loops were also found to be effective in detg. background hybridization.

IT 140603-19-6, GenBank X59814 142788-35-0, GenBank X56062 186681-80-1, GenBank U88571 196026-32-1, GenBank AF015542 391529-35-4, DNA (human glyceraldehyde-3-**phosphate** dehydrogenase cDNA)
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(nucleotide sequence, probe for detn. of background hybridization in microarrays derived from; probe microarrays with internal stds. for detn. of background hybridization)

L2 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2003 ACS
AN 1999:691252 CAPLUS
DN 131:318549
TI Methods for reducing **non-specific binding** to a nucleic acid probe **array** by controlled modification of probes or immobilizing surfaces
IN McGall, Glenn; Goldbert, Martin; Ryder, Thomas B.; Woodman, Steve
PA Affymetrix, Inc., USA
SO PCT Int. Appl., 64 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9954509	A1	19991028	WO 1999-US8745	19990420

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS,

JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK,
MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,
TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ,
MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,
CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

CA	2326498	AA	19991028	CA 1999-2326498	19990420
AU	9936591	A1	19991108	AU 1999-36591	19990420
EP	1071821	A1	20010131	EP 1999-918749	19990420
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP	2002512045	T2	20020423	JP 2000-544837	19990420
US	2001049108	A1	20011206	US 2001-862571	20010523
PRAI US	1998-63311	A1	19980420		
	WO 1999-US8745	W	19990420		

this case

OS MARPAT 131:318549
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Methods for reducing **non-specific binding** to a nucleic acid probe **array** by controlled modification of probes or immobilizing surfaces

AB The present invention provides a variety of methods for reducing **non-specific binding** of a target mol. or plurality of target mols. to an **array** of oligonucleotides. The methods of the present invention include surface modification techniques and oligonucleotide modification techniques. Methods of integrating probe synthesis and surface modification are described. According to one method of the present invention, **non-specific binding** of a target mol. to an **array** of oligonucleotides is reduced by replacing at least one of: the protecting groups on each of the plurality of oligonucleotides, and the protecting groups on each of the protected regions of the substrate, with a **neg. charged phosphate** residue. Use of these methods to eliminate background in microarray hybridization is demonstrated.

IT Photolysis
(UV, in removal of protecting groups from oligonucleotide microarrays; methods for reducing **non-specific binding** to nucleic acid probe **array** by controlled modification of probes or immobilizing surfaces)

IT Polyelectrolytes
(anionic, as surface coatings for lowering background hybridization against probe microarrays; methods for reducing **non-specific binding** to nucleic acid probe **array** by controlled modification of probes or immobilizing surfaces)

IT Langmuir-Blodgett films
(as substrate for oligonucleotide microarray immobilization; methods for reducing **non-specific binding** to nucleic acid probe **array** by controlled modification of probes or immobilizing surfaces)

IT Fluoropolymers, uses
Oxides (inorganic), uses
RL: DEV (Device component use); USES (Uses)
(as substrate for oligonucleotide microarray immobilization; methods for reducing **non-specific binding** to nucleic acid probe **array** by controlled modification of probes or immobilizing surfaces)

IT Glass, uses
RL: DEV (Device component use); USES (Uses)
(functionalized, as substrate for oligonucleotide microarray immobilization; methods for reducing **non-specific binding** to nucleic acid probe **array** by controlled modification of probes or immobilizing surfaces)

IT Probes (nucleic acid)

RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)
(immobilized microarrays; methods for reducing **non-specific binding** to nucleic acid probe **array** by controlled modification of probes or immobilizing surfaces)

IT Electrolysis
IR photolysis
Photolysis
Radiolysis
X-ray radiolysis
(in removal of protecting groups from oligonucleotide microarrays; methods for reducing **non-specific binding** to nucleic acid probe **array** by controlled modification of probes or immobilizing surfaces)

IT Nucleic acid hybridization
(microarray hybridization; methods for reducing **non-specific binding** to nucleic acid probe **array** by controlled modification of probes or immobilizing surfaces)

IT Protective groups
(removal from members of oligonucleotide **arrays** of; methods for reducing **non-specific binding** to nucleic acid probe **array** by controlled modification of probes or immobilizing surfaces)

IT Phosphorothioate oligonucleotides
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis and immobilization of microarrays of; methods for reducing **non-specific binding** to nucleic acid probe **array** by controlled modification of probes or immobilizing surfaces)

IT 1303-00-0, Gallium arsenide, uses 7440-21-3, Silicon, uses 7440-56-4, Germanium, uses 9002-84-0 9003-53-6, Polystyrene
RL: DEV (Device component use); USES (Uses)
(as substrate for oligonucleotide microarray immobilization; methods for reducing **non-specific binding** to nucleic acid probe **array** by controlled modification of probes or immobilizing surfaces)

IT 961-07-9D, 2'-Deoxyguanosine, immobilized derivs. 247934-65-2D, immobilized
RL: RCT (Reactant); RACT (Reactant or reagent)
(for surface modification synthesis and immobilization of oligonucleotide microarrays; methods for reducing **non-specific binding** to nucleic acid probe **array** by controlled modification of probes or immobilizing surfaces)

IT 110894-23-0 125607-09-2 247934-62-9 247934-63-0 247934-64-1D, immobilized
RL: RCT (Reactant); RACT (Reactant or reagent)
(for synthesis and immobilization of oligonucleotide microarrays; methods for reducing **non-specific binding** to nucleic acid probe **array** by controlled modification of probes or immobilizing surfaces)

IT 236740-29-7D, immobilized derivs. 248908-94-3D, immobilized
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis and immobilization in oligonucleotide microarray of; methods for reducing **non-specific binding** to nucleic acid probe **array** by controlled modification of probes or immobilizing surfaces)

L2 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2003 ACS
AN 1997:534585 CAPLUS
DN 127:230271
TI The role of a basic amino acid cluster in target site selection and **non-specific binding** of bZIP peptides to DNA
AU Metallo, Steven J.; Paolella, David N.; Schepartz, Alanna
CS Department Chemistry, Yale University, New Haven, CT, 06520-8107, USA

SO Nucleic Acids Research (1997), 25(15), 2967-2972
CODEN: NARHAD; ISSN: 0305-1048
PB Oxford University Press
DT Journal
LA English
TI The role of a basic amino acid cluster in target site selection and **non-specific binding** of bZIP peptides to DNA
AB The ability of a transcription factor to locate and bind its cognate DNA site in the presence of closely related sites and a vast **array** of non-specific DNA is crucial for cell survival. The CREB/ATF family of transcription factors is an important group of basic region leucine zipper (bZIP) proteins that display high affinity for the CRE site and low affinity for the closely related AP-1 site. Members of the CREB/ATF family share in common a cluster of basic amino acids at the N-terminus of their bZIP element. This basic cluster is necessary and sufficient to cause the CRE site to bend upon binding of a CREB/ATF protein. The possibility that DNA bending and CRE/AP-1 specificity were linked in CREB/ATF proteins was investigated using chimeric peptides derived from human CRE-BP1 (a member of the CREB/ATF family) and yeast GCN4, which lacks both a basic cluster and CRE/AP-1 specificity. Gain of function and loss of function expts. demonstrated that the basic cluster was not responsible for the CRE/AP-1 specificity displayed by all characterized CREB/ATF proteins. The basic cluster was, however, responsible for inducing very high affinity for nonspecific DNA. It was further shown that basic cluster-contg. peptides bind non-specific DNA in a random coil conformation. We postulate that the high nonspecific DNA affinities of basic cluster-contg. peptides result from cooperative electrostatic interactions with the **phosphate** backbone that do not require peptide organization.

=> d l1 1-24 bib,abs

L1 ANSWER 1 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 2002:737247 CAPLUS
TI The influence of DMPK as an integrated partner in modern drug discovery
AU Riley, Robert J.; Martin, Iain J.; Cooper, Anne E.
CS Department of Physical and Metabolic Science, AstraZeneca R and D Charnwood, Loughborough, LE11 5RH, UK
SO Current Drug Metabolism (2002), 3(5), 527-550
CODEN: CDMUBU; ISSN: 1389-2002
PB Bentham Science Publishers Ltd.
DT Journal
LA English
AB In response to the challenge laid down by advances in other drug discovery functions, DMPK has now established an **array** of automated, miniaturized in vitro screens, rapid bioanal. methodologies and in silico tools with which to optimize or predict passive absorption, metabolic clearance and minimise drug-drug interaction potential. The awareness of the pivotal role that physicochem. properties play in the control of many of these processes has been key. This review highlights some of these structure-activity relationships with emphasis on drug absorption, clearance, protein binding and distribution. However, some fundamental processes remain to be elucidated fully, including the in vivo impact of **non-specific** or futile **binding** in in vitro screens and the functional significance of intestinal and hepatobiliary transporter proteins. Transgenic animals should soon add value to our understanding of the contribution of transporter proteins to drug bioavailability (intestinal and hepatic drug uptake/efflux) and drug interactions and in validating projections for Man. Future studies should also focus on the evaluation of the various in vitro human CYP induction screens available, with particular emphasis on their predictive value for the clin. scenario.
RE.CNT 143 THERE ARE 143 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 2 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 2002:716938 CAPLUS
DN 137:244249
TI **Non-specific binding** resistant protein **arrays** and methods for making the same
IN Wagner, Peter; Kernen, Peter; Lu, Hongbo; Tran, Huu
PA USA
SO U.S. Pat. Appl. Publ., 36 pp., Cont.-in-part of U.S. 6,329,209.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 7

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002132272	A1	20020919	US 2001-46442	20011027
	US 6406921	B1	20020618	US 1998-115455	19980714
	US 6329209	B1	20011211	US 1999-353555	19990714
PRAI	US 1998-115455	A2	19980714		
	US 1999-353555	A2	19990714		

AB **Arrays** of protein-capture agents useful for the simultaneous detection of a plurality of proteins which are the expression products, or fragments thereof, of a cell or population of cells in an organism are provided. A variety of antibody **arrays**, in particular, are described. Methods of both making and using the **arrays** of protein-capture agents are also disclosed. The invention **arrays** are particularly useful for various proteomics applications including assessing patterns of protein expression and modification in cells.

L1 ANSWER 3 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 2002:613656 CAPLUS
TI Protein microarray fabrication for immunosensing
AU Inerowicz, Halina D.; Howell, Stephen W.; Regnier, Fred E.; Reifenberger, Ron
CS Department of Chemistry, Purdue University, West Lafayette, IN, 47907, USA
SO Abstracts of Papers, 224th ACS National Meeting, Boston, MA, United States, August 18-22, 2002 (2002), ANYL-141 Publisher: American Chemical Society, Washington, D. C.
CODEN: 69CZPZ
DT Conference; Meeting Abstract
LA English
AB Protein microarrays will be of broad utility in the miniaturization of immunosensors. By patterning specific proteins, surfaces can be functionalized to target complementary proteins. This paper will report techniques for creating protein patterns on surfaces. Microcontact printing techniques, along with microfluidics were used to fabricate protein **arrays** with micrometer lateral resoln. on glass and gold. Stamps carrying proteins to be printed were fabricated from polydimethysiloxane (PDMS) elastomer by molding. Protein deposition was also achieved through **arrays** of microfluidic channels. This work focuses on the deposition of antibodies in microarrays that were directed against bacteria and IgG proteins. Scanning probe microscopy and fluorescence microscopy were used to characterize the microarrays before and after performing immunoassays. The characterization revealed that protein **arrays** with a high level of homogeneity, according to scanning probe microscopy, showed low **non-specific binding** of non-targeted compds. and high binding capacity for antigens.

L1 ANSWER 4 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 2002:597731 CAPLUS
TI Development and characterization of Ni-NTA-bearing microspheres
AU Lauer, Sabine A.; Nolan, John P.

CS Bioscience Division and National Flow Cytometry Resource, Los Alamos National Laboratory, Los Alamos, NM, USA
SO Cytometry (2002), 48(3), 136-145
CODEN: CYTODQ; ISSN: 0196-4763
PB Wiley-Liss, Inc.
DT Journal
LA English
AB Background: For ease of purifn., proteins are often expressed with a short affinity sequence of five or six adjacent histidine residues (His-tag). This His-tag binds to the metal of metal chelator complexes such as Ni2+-nitrilotriacetic acid (Ni-NTA) or -iminodiacetic acid (Ni-IDA). Chromatog. resins bearing covalently attached metal chelator complexes are used widely for the easy affinity purifn. of His-tagged proteins or peptides. Because Ni-NTA microspheres were not com. available at the beginning of our studies, we prepd. and characterized such microspheres to immobilize His-tagged proteins and study their interactions. Our microspheres are of three types: (a) metal chelator complexes bound covalently to polystyrene microspheres, (b) metal chelator complexes bound covalently to silica microspheres, and (c) lipid-linked metal chelator complexes adsorbed to silica microspheres forming self-assembled bilayer membranes where the metal chelators have lateral mobility. Methods: The microspheres bearing covalently attached Ni-chelator were synthesized by reacting a primary aminebearing Ni-NTA ligand with carboxy-functionalized microspheres and then loading with Ni2+. Microspheres with laterally mobile metal chelator were made by incubating glass microspheres with liposomes contg. phosphatidylcholine (PC) and the metal chelating lipid 1,2-dioleoyl-sn-glycero-3-[(N(5-amino-1-carboxypentyl)iminodiacetic acid)succinyl]. Binding of a His-tagged enhanced green fluorescent protein (EGFP) was used to characterize these microspheres by flow cytometry for their specificity, sensitivity, capacity and stability. Results: While all micospheres specifically bind His-tagged proteins, the conditions to achieve this are different for the polystyrene and silica-based spheres. All three types of microspheres bind His-EGFP with satn. occurring at 30-50 nM and an apparent avidity (concn. of half-maximal binding) of approx. 1 to 2 .times. 10-8 M at pH 7.4. Binding of His-EGFP is inhibited by imidazole or ethylene-diaminetetraacetic acid (EDTA). Polystyrene Ni-NTA microspheres showed significant nonspecific binding as measured by binding in the presence of imidazole or EDTA or by binding of fluorescent proteins lacking a His-tag. This **non-specific binding** of proteins to and aggregation of polystyrene spheres could only be prevented by the inclusion of low concns. of Tween 20, but not by including bovine serum albumin (BSA), polyethylene glycols, or polyvinylpyrrolidones as blocking agents. In contrast, silica-based microspheres with covalently attached Ni-NTA or silica microspheres bearing adsorbed bilayers that contain Ni-NTA-lipid showed little nonspecific binding in the presence of BSA. Our results on the stability of immobilization indicate that washing destabilizes the binding of His-tagged proteins to Ni-NTA microspheres. This binding consists of two interactions of different affinities. We also demonstrate that limited multiplexed anal. with differently sized silica microspheres bearing the Ni-NTA-lipid is feasible. Conclusions: The microspheres described are well suited to selectively immobilize His-tagged proteins to analyze their interactions by flow cytometry. The affinity and kinetic stability of the interaction of His-tagged proteins with Ni-NTA are insufficient to use Ni-NTA microspheres in multiplexed anal. formats where different His-tagged proteins are bound to distinct microspheres. Improvements towards this end (improved chelators and/or improved affinity tags) are crit. for extending the use of this method. We are currently working on novel chelators to strengthen the stability of immobilization of His-tagged proteins to surfaces. Such improvements would greatly enhance the anal. of interactions of immobilized His-tagged proteins and could make the development of microsphere-based **arrays** with His-tagged protein/antibody possible.
RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 5 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 2002:429464 CAPLUS
DN 137:1480
TI Probe microarrays with internal standards for determination of background hybridization
IN Delenstarr, Glenda C.; Wolber, Paul K.; Sana, Theodore R.
PA USA
SO U.S. Pat. Appl. Publ., 38 pp., Cont.-in-part of U.S. Ser. No. 398,399.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002068293	A1	20020606	US 2001-899381	20010702
	US 2002051973	A1	20020502	US 1999-398399	19990917
PRAI	US 1999-398399	A2	19990917		

AB Nucleic acid **arrays** that have background features, and methods for using the same, are provided. The subject nucleic acid **arrays** include both hybridization features and defined background features, where the background features provide a background signal in a hybridization assay that is made up of a feature substrate component, a nucleic acid probe component and a nucleic acid probe **non-specific binding** component. In practicing the subject methods, the **arrays** are contacted with a sample and signals are obsd. for both hybridization features and background features. The background feature signal is then subtracted from the hybridization feature signal to obtain a background cor. hybridization feature signal that is employed as the output of the assay, e.g., to det. the presence, either qual. or quant., of the analyte target nucleic acid in the sample. The probes for detn. of background hybridization may fail to hybridize for a variety of reasons including structure, conformation, sequence, presence of base analogs, or the presence of abasic regions. Also provided are kits for use in practicing the subject methods. Probes intended to hybridize to the human glyceraldehyde-3-phosphate dehydrogenase were tested and a no. that did not hybridize to their targets in microarrays were identified. These probes and their targets were used to det. the minimal hybridization in a microarray. Probes forming internal hairpin loops were also found to be effective in detg. background hybridization.

L1 ANSWER 6 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 2002:276196 CAPLUS
DN 136:305098
TI Rapid detection of organism-specific DNA in a sample by PCR and nucleic acid hybridization
IN Quere, Ronan; Commes Maerten, Therese; Marti, Jacques; Piquemal, David
PA Skuld-Tech S.A.R.L., Fr.
SO PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DT Patent
LA French
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002029096	A2	20020411	WO 2001-FR3077	20011005

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,

DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

	FR 2815043	A1	20020412	FR 2000-12717	20001005
	AU 2001093957	A5	20020415	AU 2001-93957	20011005
PRAI	FR 2000-12717	A	20001005		
	WO 2001-FR3077	W	20011005		

AB A rapid method of detecting DNA from one or more species in a sample by PCR and hybridization is described. An **array** of probes is immobilized on a solid support and the support is the satd. with DNA distinct from that of the target organisms to minimize **non-specific binding**. The DNA sample is amplified and labeled and the amplification products are then hybridized to the probe **array** and the hybridization patterns analyzed to identify the organisms in the sample. Labeling may be dyes, radioisotopes, or chromogenic substrates. The use of digoxigenin as a label is demonstrated in the detn. of white spot syndrome virus in shrimp.

L1 ANSWER 7 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 2002:190244 CAPLUS
TI ProteinchipTM technology: a new and facile method for the identification and measurement of high density lipoprotein (HDL) apo A-I, A-II and isoforms in patients with diabetes and coronary disease
AU Dayal, Bishambar; Ertel, Norman H.
CS VA NJ Health Care System, East Orange, NJ, 07018, USA
SO Abstracts of Papers, 223rd ACS National Meeting, Orlando, FL, United States, April 7-11, 2002 (2002), MEDI-125 Publisher: American Chemical Society, Washington, D. C.
CODEN: 69CKQP
DT Conference; Meeting Abstract
LA English
AB Plasma HDL-cholesterol (HDL-C) levels are inversely correlated with risk for atherosclerosis. The mechanism for this assocn. may involve reverse transport of cholesterol. Many but not all epidemiol. studies have indicated a closer assocn. of HDL Apo A-1 with coronary risk than with HDL-C. Apo A-II assocd. with HDL2 does not seem to have a similar protective effect. In diabetics, glycosylation of HDL may result in a functionally abnormal and atherogenic Apo A-1 particle. We describe a ProteinChip technol. for the identification and quantification of apolipoprotein profiles in crude biol. samples. Expression levels of Apo A-I, Apo A-II and their glycosylated products were detd. in 1 .mu.l plasma samples placed on a SELDI (surface-enhanced laser desorption ionization) ProteinChip **array** (Ciphergen Biosystems). We compared two chips for their ability to sep. the HDL apolipoproteins-the strong anionic SAX2 and the weak cationic WCX2. We found the latter to be superior and used this chip for the clin. studies. After the capture step, the ProteinChips were washed to reduce **non-specific binding**, and retained proteins on the surface were analyzed by surface-enhanced laser desorption ionization mass spectrometry (SELDI). Apo A-I, A-II sepd. as sharp peaks at 28 and 17 kD and did not overlap with serum albumin peaks. Patients with types 1 and 2 diabetes had reduced levels of HDL apolipoproteins compared to normals. Since these assays can be completed on a large no. of clin. samples in less than an hour, further development of this technique should be useful in epidemiol. studies of atherosclerosis, particularly in patients with diabetes mellitus.

L1 ANSWER 8 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 2002:173210 CAPLUS
DN 136:275515
TI Protein nanoarrays generated by dip-pen nanolithography
AU Lee, Ki-Bum; Park, So-Jung; Mirkin, Chad A.; Smith, Jennifer C.; Mrksich, Milan
CS Department of Chemistry and Center for Nanofabnrcation and Molecular Self-Assembly, Northwestern University, Evanston, IL, 60208, USA
SO Science (Washington, DC, United States) (2002), 295(5560), 1702-1705

CODEN: SCIEAS; ISSN: 0036-8075
PB American Association for the Advancement of Science
DT Journal
LA English
AB Dip-pen nanolithog. was used to construct **arrays** of proteins with 100- to 350-nm features. These nanoarrays exhibit almost no detectable **non-specific binding** of proteins to their passivated portions even in complex mixts. of proteins, and therefore provide the opportunity to study a variety of surface-mediated biol. recognition processes. For example, reactions involving the protein features and antigens in complex solns. can be screened easily by at. force microscopy. As further proof-of-concept, these **arrays** were used to study cellular adhesion at the submicrometer scale.
RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 9 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 2002:172437 CAPLUS
DN 136:213163
TI Single target counting assays using semiconductor nanocrystals
IN Empedocles, Stephen Alexander; Watson, Andrew R.; Phillips, Vince; Wong, Edith
PA Quantum Dot Corp., USA
SO U.S. Pat. Appl. Publ., 42 pp., Cont.-in-part of U. S. Ser. No. 784,866.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002028457	A1	20020307	US 2001-882193	20010613
PRAI	US 2000-182844P	P	20000216		
	US 2000-211054P	P	20000613		
	US 2001-784866	A2	20010215		

AB The present invention provides assays that allow for the detection of a single copy of a target of interest. The target species is either directly or indirectly labeled with a semiconductor nanocrytal, "quantum dot." The bright and tunable fluorescence of the quantum dot is readily detected using methods described herein. Also provided are assays that are based on the colocalization of two or more differently colored quantum dots on a single target species, which provides superbly sensitive assays in which the decrease in assay sensitivity caused by **non-specific binding** of assay mixt. components to the assay substrate is minimized. The assays are of use to detect target species including, but are not limited to, nucleic acids, polypeptides, small org. bioactive agents (e.g., drugs, agents of war, herbicides, pesticides, etc.) and organisms.

L1 ANSWER 10 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 2001:792271 CAPLUS
DN 135:299497
TI Apparatus for biomolecular **array** hybridization facilitated by agitation during centrifuging
IN Gordon, Gary B.
PA Agilent Technologies, Inc., USA
SO U.S., 10 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6309875	B1	20011030	US 2000-514975	20000229
	US 2002052042	A1	20020502	US 2001-10020	20011205

PRAI US 2000-514975 A2 20000229
US 2000-590934 A1 20000608
US 2001-971867 A1 20011004

AB **Array** hybridization can be facilitated by agitating a reaction cell subject to centrifugal force greater than 1G. A two-dimensional hybridization **array** is preferably oriented generally orthogonal to the centrifugal force. Agitation involves titling the **array** back and forth about an axis, preferably parallel to a centrifuge axis. The centrifugal force serves, in a sense, as supergravity helping to overcome **non-specific binding** forces (viscous forces and other forces at the liq.-solid boundary) that limit the rate of liq. flow. Thus, the agitation rate and the related replenishment rate can be increased. The agitation causes the sample liq. to wash back and forth across the **array**, which remains protected by a thin liq. film. The resulting "tidal" motion, results in thorough mixing of the sample liq. In addn., since only a thin film is required over much of the **array**, typically costly sample vol. can be reduced. Thus, faster hybridization with lower sample vols. can be achieved.

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 11 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 2001:618283 CAPLUS
DN 135:177680
TI Single target counting assays using semiconductor nanocrystals
IN Empedocles, Stephen Alexander; Watson, Andrew R.
PA Quantum Dot Corporation, USA
SO PCT Int. Appl., 79 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001061348	A1	20010823	WO 2001-US5164	20010216

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 2000-182844P P 20000216

AB The present invention provides assays that allow for the detection of a single copy of a target of interest. The target species is either directly or indirectly labeled with a semiconductor nanocrystal, "quantum dot". The bright and tunable fluorescence of the quantum dot is readily detected using the method. Also provided are assays that are based on the colocalization of two or more differently colored quantum dots on a single target species, which provides superbly sensitive assays in which the decrease in assay sensitivity caused by **non-specific binding** of assay mixt. components to the assay substrate is minimized. The assays are of use to detect target species including, but are not limited to, nucleic acids, polypeptides, small org. bioactive agents (e.g., drugs, agents of war, herbicides, pesticides, etc.) and organisms.

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 12 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 2001:474276 CAPLUS

DN 136:194697
TI Development of novel cDNA **arrays** using nylon membrane as solid support
AU Kojima, Hiroki; Arakawa, Taku; Asai, Tomomi; Kawakami, Fumikiyo
CS Department of Bio-business, Toyobo Co., Ltd., Japan
SO Bio Industry (2001), 18(5), 13-19
CODEN: BIINEG; ISSN: 0910-6545
PB Shi Emu Shi
DT Journal; General Review
LA Japanese
AB A review. A novel cDNA **array** system using nylon membranes, GeneNavigator, was described. As remarkable features of GeneNavigator, it is emphasized that this **array** system is provided as a kit including reagents for sample mRNA extn.and chemiluminescence detection. Some problems experienced with the glass plate microarrays that might be caused by the nature of glass, i e., fluorescence quenching, limitation of probe d. and **non-specific bindings** were much improved in GeneNavigator by replacing the matrix with a nylon membrane. The cDNA probes immobilized on the membrane that have been specially designed to improve specificity and sample retention are available for detection of human and mouse cancer gene expression. The detailed tech. notes on the sample mRNA prepn., amplification by PCR, detection and data analyses were also discussed with some data presented for the evaluation of reproducibility and detection limit by Gene Navigator system.

L1 ANSWER 13 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 2001:380820 CAPLUS
DN 135:1201
TI Long oligonucleotide **arrays**
IN Chenchik, Alex; Munishkin, Alexander; Simonenko, Peter
PA Clontech Laboratories, Inc., USA
SO PCT Int. Appl., 46 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001036682	A2	20010525	WO 2000-US31562	20001115
	WO 2001036682	A3	20020117		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 2002160360	A1	20021031	US 1999-440829	19991115
	EP 1230395	A2	20020814	EP 2000-978747	20001115
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
PRAI	US 1999-440829	A	19991115		
	WO 2000-US31562	W	20001115		

AB Long oligonucleotide **arrays**, as well as methods for their prepn. and use in hybridization assays, are provided. The subject **arrays** are characterized in that at least a portion of the probes of the **array**, and usually all of the probes of the **array**, are long oligonucleotides, having a length of from about 50 to 120 nt. Each long oligonucleotide probe on the **array** is preferably chosen to exhibit substantially the same high target binding efficiency and substantially the same low **non-specific binding** under conditions in which the **array** is employed.

The hybridization efficiency of 36 probes of different length on the **array** were tested. The subject **arrays** find use in a no. of different applications, e.g. differential gene expression anal.

L1 ANSWER 14 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 2001:300212 CAPLUS
DN 135:88776
TI Structural Basis of **Non-specific** Lipid **Binding** in Maize Lipid-transfer Protein Complexes Revealed by High-resolution X-ray Crystallography
AU Han, Gye Won; Lee, Jae Young; Song, Hyun Kyu; Chang, Changsoo; Min, Kyeongsik; Moon, Jinho; Shin, Dong Hae; Kopka, Mary L.; Sawaya, Michael R.; Yuan, Hanna S.; Kim, Thomas D.; Choe, Jungwoo; Lim, Dori; Moon, Hee Jung; Suh, Se Won
CS Molecular Biology Institute, University of California at Los Angeles, Los Angeles, CA, 90095-1570, USA
SO Journal of Molecular Biology (2001), 308(2), 263-278
CODEN: JMOBAK; ISSN: 0022-2836
PB Academic Press
DT Journal
LA English
AB Non-specific lipid-transfer proteins (nsLTPs) are involved in the movement of phospholipids, glycolipids, fatty acids, and steroids between membranes. Several structures of plant nsLTPs have been detd. both by X-ray crystallog. and NMR. However, the detailed structural basis of the **non-specific binding** of hydrophobic ligands by nsLTPs is still poorly understood. In order to gain a better understanding of the structural basis of the **non-specific binding** of hydrophobic ligands by nsLTPs and to investigate the plasticity of the fatty acid binding cavity in nsLTPs, seven high-resoln. (between 1.3 .ANG. and 1.9 .ANG.) crystal structures have been detd. These depict the nsLTP from maize seedlings in complex with an **array** of fatty acids. A detailed comparison of the structures of maize nsLTP in complex with various ligands reveals a new binding mode in an nsLTP-oleate complex which has not been seen before. Furthermore, in the caprate complex, the ligand binds to the protein cavity in two orientations with equal occupancy. The vol. of the hydrophobic cavity in the nsLTP from maize shows some variation depending on the size of the bound ligands. The structural plasticity of the ligand binding cavity and the predominant involvement of non-specific van der Waals interactions with the hydrophobic tail of the ligands provide a structural explanation for the non-specificity of maize nsLTP. The hydrophobic cavity accommodates various ligands from C10 to C18. The C18:1 ricinoleate with its hydroxyl group hydrogen bonding to Ala68 possibly mimics cutin monomer binding which is of biol. importance. Some of the myristate binding sites in human serum albumin resemble the maize nsLTP, implying the importance of a helical bundle in accommodating the **non-specific binding** of fatty acids. (c) 2001 Academic Press.
RE.CNT 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 15 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 2001:218570 CAPLUS
DN 135:30424
TI Ligand-binding characterization of xanthophyll carotenoids to solubilized membrane proteins derived from human retina
AU Yemelyanov, Alexander Yu.; Katz, Nikita B.; Bernstein, Paul S.
CS Moran Eye Center, University of Utah School of Medicine, Salt Lake City, UT, 84132, USA
SO Experimental Eye Research (2001), 72(4), 381-392
CODEN: EXERA6; ISSN: 0014-4835
PB Academic Press
DT Journal

LA English
AB The macula of the human retina contains extraordinarily high concns. of lutein and zeaxanthin, xanthophyll carotenoids that appear to play an important role in protecting against age-related macular degeneration, the leading cause of blindness among the elderly. It is likely that the uptake and stabilization of these carotenoids is mediated by specific xanthophyll-binding proteins. In order to purify and characterize such a binding protein, a carotenoid-rich membrane fraction derived from human macula or peripheral retina was prepd. by homogenization, differential centrifugation, and detergent solubilization. Further purifn. was carried out using ion-exchange chromatog. and gel-filtration chromatog. coupled with continuous photodiode-**array** monitoring for endogenously assocd. xanthophyll carotenoids. The most highly purified prepns. contained two major protein bands at 25 and 55 kDa that consistently co-eluted with endogenous lutein and zeaxanthin. The visible absorbance spectrum of the binding protein prepn. closely matches the spectral absorbance of the human macular pigment, and it is bathochromically shifted about 10 nm from the spectrum of lutein and zeaxanthin dissolved in org. solvents. Binding of exogenously added lutein and zeaxanthin is saturable and specific with an apparent Kdof approx. 1 .mu.M. Canthaxanthin and .beta.-carotene exhibit no significant binding activity to solubilized retinal membrane proteins when assayed under identical conditions. Other potential mammalian xanthophyll-binding proteins such as albumin, tubulin, lactoglobulin and serum lipoproteins possess only weak **non-specific binding** affinity for carotenoids when assayed under the same stringent binding conditions. This investigation provides the first direct evidence for the existence of specific xanthophyll-binding protein(s) in the vertebrate retina and macula. The possible roles of xanthophyll-binding proteins in normal macular function and in the pathogenesis of age-related macular degeneration remain to be elucidated. (c) 2001 Academic Press.
RE.CNT 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 16 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 2000:902133 CAPLUS
DN 134:292225
TI Optimization of DNA microsensor **arrays** for biological detection
AU Gau, Jen-Jr; Lan, Esther H.; Dunn, Bruce; Ho, Chih-Ming
CS Biomedical Engineering Interdepartmental Graduate Degree Program, University of California, Los Angeles, CA, 90095-1597, USA
SO Micro-Electro-Mechanical Systems (2000), 2, 667-672
CODEN: MSIYAW
PB American Society of Mechanical Engineers
DT Journal
LA English
AB This paper describes the characterization and optimization of a reusable DNA microsensor **array** for rapid biol. agent detection developed in previous publications. This MEMS based DNA sensor utilizes a std. three-electrode electrochem. cell configuration with novel micro fabricated structure design to minimize **non-specific binding**. The sensor module is easily to be adapted to various protocols and can be used for rapid detection of macromols. (DNA, RNA) from targets such as uropathogenic Escherichia coli in urine and microorganisms causing otitis media (middle ear infection). Less than 105 E. coli cells can be detected from the urine sample of a patient with urine tract infection. The sensitivity is enhanced by appropriate sensor characterization and surface modification. The total detection time including sample prepn. can be reduced to 25 min by using a POD conjugated oligonucleotide.
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 17 OF 24 CAPLUS COPYRIGHT 2003 ACS

AN 2000:330693 CAPLUS
TI Low-density-**array** optical chips for multiplex detection of biomolecules.
AU Schneider, Bernard H.; Vach, M. Danna; Dickinson, Beth
CS Photonic Sensor, Atlanta, GA, 30308, USA
SO Book of Abstracts, 219th ACS National Meeting, San Francisco, CA, March 26-30, 2000 (2000), IEC-236 Publisher: American Chemical Society, Washington, D. C.
CODEN: 69CLAC
DT Conference; Meeting Abstract
LA English
AB We are developing low-d. **array** optical chips for a range of clin. applications where the detection and discrimination of a small no. (<100) of biomol. species is required. For these applications, such as point-of-care diagnostic panels (e.g. cardiac testing, therapeutic monitoring),clin. trials and genetic testing, low-d. **arrays** may be more appropriate than the high-d. microfabricated **arrays** currently being developed for drug discovery, proteomics and gene expression applications. The optical chip measures the real-time refractive index increase caused by biomol. binding (e.g., hybridization or antibody-antigen interactions) to the chip surface. Using integrated interferometric detection, background **non-specific binding** can be minimized without compromising specificity. Direct detection of proteins and nucleic acids has been demonstrated at picomolar concns., and a further three orders of magnitude improvement shown when colloidal gold is used to provide signal amplification. More effective signal amplification schemes are being developed to lower the detection limit to the point where, for specific applications, target amplification can be avoided.

L1 ANSWER 18 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 1999:691252 CAPLUS
DN 131:318549
TI Methods for reducing **non-specific binding** to a nucleic acid probe **array** by controlled modification of probes or immobilizing surfaces
IN McGall, Glenn; Goldbert, Martin; Ryder, Thomas B.; Woodman, Steve
PA Affymetrix, Inc., USA
SO PCT Int. Appl., 64 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9954509	A1	19991028	WO 1999-US8745	19990420
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2326498	AA	19991028	CA 1999-2326498	19990420
	AU 9936591	A1	19991108	AU 1999-36591	19990420
	EP 1071821	A1	20010131	EP 1999-918749	19990420
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2002512045	T2	20020423	JP 2000-544837	19990420
	US 2001049108	A1	20011206	US 2001-862571	20010523
PRAI	US 1998-63311	A1	19980420		
	WO 1999-US8745	W	19990420		

OS MARPAT 131:318549
AB The present invention provides a variety of methods for reducing **non-specific binding** of a target mol. or plurality of target mols. to an **array** of oligonucleotides. The methods of the present invention include surface modification techniques and oligonucleotide modification techniques. Methods of integrating probe synthesis and surface modification are described. According to one method of the present invention, **non-specific binding** of a target mol. to an **array** of oligonucleotides is reduced by replacing at least one of: the protecting groups on each of the plurality of oligonucleotides, and the protecting groups on each of the protected regions of the substrate, with a neg. charged phosphate residue. Use of these methods to eliminate background in microarray hybridization is demonstrated.
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 19 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 1999:365111 CAPLUS
DN 131:239888
TI Waveguide multichannel immunoassay using photo-deprotection immobilization
AU Plowman, Thomas E.; Blawas, Amy S.; Oliver, Tom F.; Reichert, W. Monty
CS Duke Univ., Durham, NC, USA
SO Proceedings of SPIE-The International Society for Optical Engineering (1999), 3603(Systems and Technologies for Clinical Diagnostics and Drug Discovery II), 163-169
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
AB A planar optical waveguide was used to simultaneously excite fluorescence due to antigen binding in three sep. areas of immobilized antibody. Biotin labeled, polyclonal antibodies to goat, human, and rabbit IgG were immobilized through surface bound, photo-activated MeNPOC-biotin-bSA and avidin. Exposing the MeNPOC to UV light effectively uncaged the biotin mol. attached to the bSA and allowed avidin, followed by the biotin labeled antibody, to bind to the waveguide surface. Whereas a time intensive, **non-specific binding** prone step-and-repeat method is normally used to form the individual capture layers, we chose to pursue a combined deposition method involving sample wells and photo-activated crosslinkers. The result was a covalently linked multi-component capture layer formed in a short period of the time. Specific and cross-reactive activities of this antibody **array** were gauged by sequentially injecting analyte specific to one antibody area at a time. Results suggested that the binding of each analyte occurred predominately in the correct area and, depending on the particular antibody, generated varying levels of cross reactivity. A comparison of result with previously acquired, phys. adsorbed capture layer data did not infer one deposition technique was better than the other.
RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 20 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 1999:297246 CAPLUS
DN 130:293625
TI Method for reducing **non-specific binding** in surface-bound immunoassays by using polyethylene glycol derivatized biomolecules
IN Hornauer, Hans; Lenz, Helmut; Sluka, Peter; Karl, Johann; Mutter, Wolfgang
PA Roche Diagnostics GmbH, Germany
SO Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW
DT Patent

LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 913690	A2	19990506	EP 1998-120756	19981102
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	DE 19748489	A1	19990506	DE 1997-19748489	19971103
	US 2002052009	A1	20020502	US 1998-184043	19981102
	JP 11211727	A2	19990806	JP 1998-313811	19981104
PRAI	DE 1997-19748489	A	19971103		

AB The invention concerns the redn. of **non-specific binding** during immunoassays by immobilizing the analyte specific reactant and an analyte non-specific reactant coupled to polyethylene glycol; incubating the probe on that surface; and detecting the amt. of analyte. Further versions of the invention include the coupling of polyethylene glycol to labeled antibodies or antigens, application in sandwich assays and in **array**-type quantifications. The conjugates are of the general formulas: Pr[-(AOn)T]m; Pr-I-[-(AOn)T]m; where P = biotin or biotin derivs.; I = inert support; r = 1-10; AO = (C2-C3)-alkylene oxide; n = 5-500; T = OH, C1-C4-alkoxy, C1-C4-acyl; m = 1-10. According to another versions conjugates are: F[-(AOn)T]m; Pr'-Fr'[-(AOn)T]m; Ms-F"[-(AOn)T]m; where F = lectins, streptavidin, avidin, anti-hapten-antibodies; P' = label for the reactant; F = biomol.; r = 1-10; Ms = label; s = 1-10; F" = sol. biomol., reacts with the analyte. The invention relates to assay kits contg. the components. The method can be applied in solid phase bound hybridization reactions. Thus biotin-PEG, biotin-methoxypolyethylene glycol, and streptavidin-PEG conjugates were prepd. Polystyrene surface was coated with BSA-streptavidin conjugate; biotinylated antibodies to TSH were immobilized onto the surface; to avoid **non-specific binding** the surface was treated with biotin-PEG conjugate. Using digoxigenin labeled p24 conjugate or anti-IgG-digoxigenin conjugate followed by a latex agglutination assay it was shown that background signals were one fifth or less when using biotin-PEG conjugate compared to the control.

L1 ANSWER 21 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 1998:554817 CAPLUS
DN 129:257326
TI Leucine transport in Xenopus laevis oocytes: Functional and morphological analysis of different defolliculation procedures
AU Marciani, Paola; Castagna, Michela; Bonasoro, Francesco; Carnevali, M. Daniela Candia; Sacchi, V. Franca
CS Istituto di Fisiologia Generale e di Chimica Biologica, Facolta di Farmacia, Milan, 20134, Italy
SO Comparative Biochemistry and Physiology, Part A: Molecular & Integrative Physiology (1998), 119A(4), 1009-1017
CODEN: CBPAB5; ISSN: 1095-6433
PB Elsevier Science Inc.
DT Journal
LA English
AB L-leucine uptake in stage V Xenopus laevis oocytes was affected by the specific methods used to remove the follicle cells. In the presence of 100 mM NaCl, L-leucine uptake was reduced by 67.5% .+-. 5.7 when defolliculation was performed enzymically by collagenase treatment, whereas the redn. was 30.5% .+-. 6.4 after mech. defolliculation. The Na+ -dependent uptake of 0.1 mM L-leucine was 18.6.+-.4.6 pmol oocyte-1 40 min-1 in folliculated oocytes and 5.6.+-.1.9 in collagenase defolliculated oocytes (means .+-. SE). L-leucine uptake was not affected by the removal of the follicular layer if defolliculation occurred after the transport period; radiolabeled L-leucine is therefore not taken up into a compartment that is removed by the defolliculation process. The different L-leucine uptake rates obsd. in folliculated and defolliculated oocytes

were not due to **non-specific** L-leucine **binding** to membranes. L-leucine kinetics showed that the L-leucine Vmax and Km values were lower in oocytes deprived of the follicular layer than in control oocytes enveloped in intact follicular layers. The Vmax and Km values of Na+ -dependent L-leucine transport, calcd. from data obtained the day after defolliculation by collagenase treatment, were: 16.+-.1.5 pmol oocyte-1 40 min-1 and 57.+-.21 .mu.mol (mean .+-. SD). The Na+ -activation curve of 0.1 mM L-leucine was hyperbolic in folliculated oocytes and sigmoidal in defolliculated oocytes. The morphol. anal. performed in parallel with the transport expts. showed that after defolliculation, the fibers forming the vitelline membrane tended to be arranged in a more regular orthogonal **array**, and the no. of oocyte microvilli was reduced after collagenase treatment. Mech. defolliculation did not appreciably affect the oocyte microvilli, however this procedure did not completely remove all follicle cells. The damage to collagenase treated oocytes was reversible, and the functional and structural features of most oocytes improved upon subsequent in vitro incubation. The recovery process seemed to involve protein synthesis in view of the increased value of L-leucine Vmax, and microscopic observation showing recovery of the microvillar app.

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 22 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 1998:197670 CAPLUS
DN 128:254896
TI Multi-**array**, multi-specific electrochemiluminescent testing
IN Wohlstadter, Jacob N.; Wilbur, James; Sigal, George; Martin, Mark; Guo, Liang-Hong; Fischer, Alan; Leland, Jon; Billadeau, Mark A.; Helms, Larry R.; Darvari, Ramin
PA Meso Scale Technologies, LLC, USA
SO PCT Int. Appl., 288 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9812539	A1	19980326	WO 1997-US16942	19970917
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	US 6207369	B1	20010327	US 1996-715163	19960917
	AU 9746495	A1	19980414	AU 1997-46495	19970917
	AU 743567	B2	20020131		
	EP 944820	A1	19990929	EP 1997-945249	19970917
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2001503856	T2	20010321	JP 1998-514984	19970917
PRAI	US 1996-715163	A	19960917		
	US 1995-402076	B2	19950310		
	US 1995-402277	B2	19950310		
	US 1996-611804	A2	19960306		
	WO 1997-US16942	W	19970917		

AB Materials and methods are provided for producing patterned multi-**array**, multi-sp. surfaces for use in diagnostics. The invention provides for electrochemiluminescence methods for detecting or measuring an analyte of interest. It also provides for novel electrodes for ECL assays. Materials and methods are provided for the chem. and/or phys.

control of conducting domains and reagent deposition for use multiply specific testing procedures.

L1 ANSWER 23 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 1997:534585 CAPLUS
DN 127:230271
TI The role of a basic amino acid cluster in target site selection and **non-specific binding** of bZIP peptides to DNA
AU Metallo, Steven J.; Paolella, David N.; Schepartz, Alanna
CS Department Chemistry, Yale University, New Haven, CT, 06520-8107, USA
SO Nucleic Acids Research (1997), 25(15), 2967-2972
CODEN: NARHAD; ISSN: 0305-1048
PB Oxford University Press
DT Journal
LA English
AB The ability of a transcription factor to locate and bind its cognate DNA site in the presence of closely related sites and a vast **array** of non-specific DNA is crucial for cell survival. The CREB/ATF family of transcription factors is an important group of basic region leucine zipper (bZIP) proteins that display high affinity for the CRE site and low affinity for the closely related AP-1 site. Members of the CREB/ATF family share in common a cluster of basic amino acids at the N-terminus of their bZIP element. This basic cluster is necessary and sufficient to cause the CRE site to bend upon binding of a CREB/ATF protein. The possibility that DNA bending and CRE/AP-1 specificity were linked in CREB/ATF proteins was investigated using chimeric peptides derived from human CRE-BP1 (a member of the CREB/ATF family) and yeast GCN4, which lacks both a basic cluster and CRE/AP-1 specificity. Gain of function and loss of function expts. demonstrated that the basic cluster was not responsible for the CRE/AP-1 specificity displayed by all characterized CREB/ATF proteins. The basic cluster was, however, responsible for inducing very high affinity for nonspecific DNA. It was further shown that basic cluster-contg. peptides bind non-specific DNA in a random coil conformation. We postulate that the high nonspecific DNA affinities of basic cluster-contg. peptides result from cooperative electrostatic interactions with the phosphate backbone that do not require peptide organization.

L1 ANSWER 24 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 1997:163898 CAPLUS
TI Wettability and surface structure of hyaluronic acid and hyaluronic acid esters fouling-resistant coatings.
AU Morra, M.; Cassinelli, C.
CS Nobil Bio Ricerche, Villafranca d'Asti, 14018, Italy
SO Book of Abstracts, 213th ACS National Meeting, San Francisco, April 13-17 (1997), PMSE-341 Publisher: American Chemical Society, Washington, D. C.
CODEN: 64AOAA
DT Conference; Meeting Abstract
LA English
AB Hyaluronic acid (HA) and HA esters covalently linked to materials surfaces produce highly hydrated surface structures, that minimize **non-specific binding**. While it is well known that an **array** of intramol. hydrogen bonding affects properties of hyaluronan mols. in soln., the structure of surface bonded hyaluronans is much less known. We have used wettability techniques to try to gain insights on the structure-properties relationship of surface bonded HA and HA esters. In particular, test were performed on surface-bonded HA, 50% benzyl ester of HA, 75% benzyl ester of HA. Data were compared to those obtained on a 100% benzyl ester film. Surfaces were probed by contact angle measurement and calcn. of surface free energy components, ESCA anal. and resistance to cell (fibroblasts) adhesion. Results show that increasing the esterification degree produces an increase of the electron acceptor character of surfaces, probably due to decoupling of the acidic acetamido group from the basic carboxylate anion. Contrary to the 100%

ester, HA and partial esters completely inhibit cell adhesion. The role of interfacial mobility of carbohydrate units bridging surface-bonded sites is discussed.